



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,840	10/03/2005	Seigo Kano	Q86624	2645
23373 7590 06/29/2009 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER VANAMAN, FRANK BENNETT	
			ART UNIT 3618	PAPER NUMBER
			MAIL DATE 06/29/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/532,840

Applicant(s)

KANO ET AL.

Examiner

Frank B. Vanaman

Art Unit

3618

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 9-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 31 is/are rejected.
- 7) ☒ Claim(s) 3 and 5-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 4/15/09
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 31, 2009 has been entered.

Status of Claims

2. Claims 1-31 are pending. Claim 31 is added. Claims 9-30 are withdrawn from consideration.

Information Disclosure Statement

3. Applicant's Information Disclosure Statement, filed April 15, 2009, is Acknowledged and has been considered.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 2, 4, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klemen et al. (US 6,022,287) in view of Morisawa et al. (US 5,904,631) and Riley (US 1,918,490). Klemen et al. teach a hybrid drive unit adapted to accommodate, at its input, the output of an internal combustion engine, and to drive, via its output, a vehicle drive, having an input shaft (66) which may be connected to an internal combustion engine (see col. 1, lines 24-39), an output shaft (158 and 92), a first electric motor having a stator and rotor (26, 28), a power splitting planetary gear (84) having a first rotary element (82) connected to the input shaft, a second rotary element (104) connected to the first motor and a third rotary element (102) connected to the output shaft (through one or more of 112, 148, 176, 178, 172, 174, 92), a second rearward electric motor having a stator and rotor (32, 34), a transmission (170, 192) co-

axial with the planetary gear set and first and second motors, which transmits the rotation of the second motor's rotor (through 56, 168, etc), the stators of the motors being fixed to a casing portion (14) which includes at least a forward member (20) for connecting to an engine having mating connector arrangement and thus which is intended for connection to an engine, and a mounting section (12) which the rotor of the second motor being arranged to be supported by supporting members (such as elements 156) located rearwardly of the motor and acting through bearings (238), the mounting section (proximate 12) overlapping at least a portion of the rear supporting members in an axial direction (note that forward most ends of members 156 are overlapped in an axial direction by the rearward-most portion of element 12), the rotor of the first motor being arranged to be supported by supporting members (such as elements 54) located forwardly of the motor and acting through bearings (142), the rotor of the second motor being arranged to transmit its driving torque to the output shaft (158) only through the transmission (note the rotor output connected to the sun gear sleeve 168 through engaging teeth 172, 174, and not directly to the output shaft).

The reference to Klemen et al. fails to teach that the two motors, transmission and planetary gear are located in a line with the second electric motor being rearward most. Morisawa et al. teach (see, e.g., figure 8) that it is well known to provide two electric motors, a power splitting gear set and a transmission gear set in a linear series, rather than having a gearing element located internally of a motor rotor) inside a casing, and where a motor (MG1) is located rearward-most in the line of elements. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the elements taught by Klemen et al. in a linear series as taught by Morisawa et al., with the second motor being rearward-most, as taught by Morisawa et al., to reduce the overall diameter of the assembly, and/or so as to not require excessively small-sized gearing. Note that the arrangement taught by Morisawa et al. beneficially allows the gearing to have a diameter as large as a motor without requiring the over-all casing to be of larger size, and additionally, the removal of the gearing from the location internal to the motor rotor envelope (compare to Klemen et al. at figure 1) thus enabling the

motor to be more compact, as it is no longer necessary for the rotor to be so large as to accommodate a functional planetary gearing.

While the reference to Klemen et al. as modified by Morisawa et al. fails to explicitly teach that the output shaft is "interlocked with vehicle drive wheels", the taught arrangement is explicitly intended to be installed between an engine output and the portion of a vehicle which causes it to be driven, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to connect the output of the arrangement taught by Klemen et al. to be interlocked with vehicle wheels so as to actually move the vehicle when the engine and/or motors are engaged to operate in a driving fashion, and to connect the input with the engine, for example by mounting the forward member to the engine so as to transmit the engine driving force to the output when operating in a hybrid drive mode.

The references to Klemen et al. and Morisawa et al. fail to specifically teach that the mounting section is supported by a vehicle body. Riley teaches that it is very old and very well known to provide an end of a transmission assembly (3) which is distal from an engine (2) with a mounting section (5, 6) which can be supported by a body (9, 10). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the distal end of the casing taught by Klemen et al. as modified by Morisawa et al. with a mounting section that can be supported by a vehicle body as taught by Riley, for the old and well known purpose of supporting a rearward end of the assembly with respect to the vehicle frame and body, reducing excessive fastener loading at the forward connection of the motor and transmission assembly to the engine.

Allowable Subject Matter

6. Claims 3 and 5-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Comments

7. Applicant's comments, filed with the amendment, now entered, have been carefully considered. Applicant has attempted to suggest that Morisawa et al. does not meet the limitations of the claim, essentially by asserting that Morisawa et al.'s motor MG5 necessarily corresponds to the claimed second motor generator and is thus not located in a rearward most part. The examiner has not suggested a bodily incorporation of all attributes of the reference to Morisawa et al. into the arrangement already initially taught by Klemen et al. Rather, the examiner has suggested, based on Morisawa et al's clear teaching that it is well known and well within the skill of the ordinary practitioner to, in an arrangement having a transmission and pair of motor generators, place a motor generator at the rear most location in the assembly. The examiner has not suggested that it would be somehow obvious to repurpose the motors and generators already taught by Klemen et al. such that the functions and operative connections of the respective forward and rearward motor generators are interchanged. In *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 282 (1976), the Supreme Court approved of the principle that "when a patent 'simply arranges old elements with each performing the same function it had been known to perform' and yields no more than one would expect from such an arrangement, the combination is obvious." *KSR Int'l v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). As regards the supporting of the assembly with respect to a vehicle body portion, please note the reference to Riley, long of record, which teaches that it is quite well known to provide a vehicle body support for a transmission assembly at a location rearwardly of the supporting connection with the engine. Applicant has asserted that the connection taught by Klemen et al. between the second motor rotor and sleeve portions 148 and 168 would prevent the location of the motor in a rearward-most position, however as connected both sleeve portions 148 and 168 rotate in unison with the motor rotor by dint of being meshed therewith (note connections 178, 176; 172, 174), and as such, separate rotary connections between the rotor and respective sun sleeve/gear portions are not required.

Conclusion

8. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

F. VANAMAN
Primary Examiner
Art Unit 3618

/Frank B Vanaman/
Primary Examiner, Art Unit 3618